

blm - alaska

frontiers

managing public lands for multiple use

Issue 46 January 1994

How water locked in rock gives clues to ancient people

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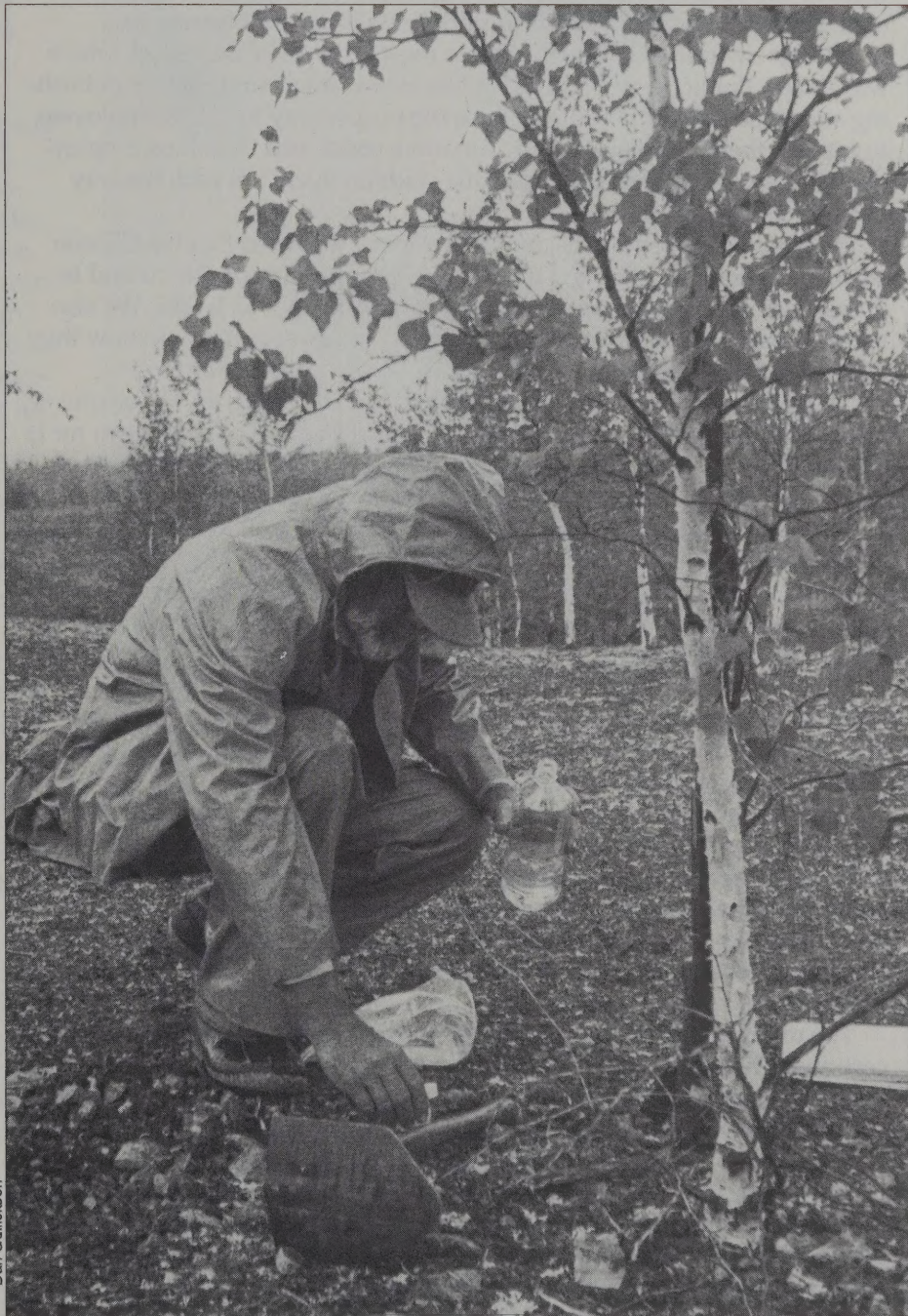
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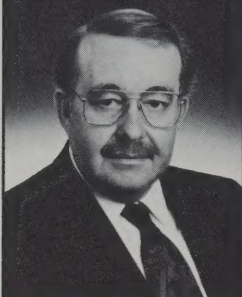
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Dan Gullickson

Arctic District archaeologist Michael Kunz installs a thermal cell in an archaeological site at Batsa Tena so he can recover annual soil temperature data. Soil temperatures affect the rate the obsidian absorbs water, allowing researchers to date sites where artifacts made from the volcanic glass are found.

The Director's Column



By Jim Baca

One of my top priorities as BLM Director is to create an atmosphere of open communication — one in which employees can feel free to voice their concerns, complaints and ideas.

Last June the Public Employees for Environmental Responsibility (PEER) published a report, written by unidentified BLM employees, that criticized our agency for its management of the public rangelands. The report was prompted by discontent over range management practices under previous administrations.

It is not my purpose here to discuss the substance of the report, which was titled "Public Trust Betrayed." Nor do I want to suggest that publishing anonymously-authored reports is the proper way for BLM employees to express their complaints. But I am more concerned that these employees felt the need to keep their identities hidden than I am with the way they made their views known.

In response to media calls about the report, we noted that the Clinton Administration is committed to improving rangeland conditions and to guaranteeing taxpayers a fair return for the use of public lands. We also stressed that the Administration welcomes employees' views on how they feel the BLM is managing—or failing to manage—the public lands.

No BLM employee should be ostracized for criticizing the status quo or, for that matter, for taking issue with proposed changes. The issue to me is not whether an employee's criticism is right or wrong, but whether that employee has the right to be heard without fear of reprisals.

The need for an open atmosphere—not only at the BLM but at all Federal agencies—is clear when one can still read headlines like "Blowing Whistle Often Harmful to Careers." That headline appeared over an October 21 newspaper article on the recent release of a report by the Merit Systems Protection Board.

The report found that of Federal employees who have blown the whistle on allegedly wasteful or illegal activities, more than a third reported reprisals. That represents a significant increase over the 24 percent who reported reprisals in a 1983 survey.

When asked what types of reprisals they had experienced, whistleblowers gave multiple answers: 49 percent said they were shunned by co-workers or managers; 47 percent said they were intimidated or verbally harassed; 47 percent said they received a poor appraisal of their work; 37 percent said they were reassigned to less desirable duties; 30 percent said they were denied an award; and 23 percent said they were transferred to a different job.

The merit board's report should raise concern among all taxpayers who care about how the Federal Government is doing its job and how it is spending their money. That's why I want to create a work environment at the BLM that encourages employees, rather than punishes them, for identifying actions that appear to be wasteful or illegal.

With more than 10,000 employees at the BLM, I believe there are dozens or perhaps hundreds of good ideas within our agency about how we could do things better or more efficiently. In a closed environment, those ideas will never be expressed—and thus fantastic opportunities for improvement will be missed. That's why I intend to create an open atmosphere at the BLM.

Compact discs help research of natural resources

Researchers working in natural resources can now tap into a terrific source for research information. BLM's Alaska Resource Library in Anchorage now offers compact discs that list eight major computer bibliographies.

"These are all disks not available anywhere else in town," said Martha Shepard, director of the library. "People working in the natural resources field will find it very valuable. A person can sit at a terminal and search for a certain subject, for example, water quality in mining or the nutritional value of crowberries."

The data bases on the CDs are:

Wildlife Worldwide 1971-present. This is *Wildlife Review* enhanced by additional citations. Nothing is better for journal citations on wildlife.

Fisheries Worldwide 1971-present. This is *Fisheries Review* enhanced by additional citations. These journal citations are oriented toward field biology of fish.

NTIS 1983-present. This indexes government-sponsored research reports from throughout the country including EPA reports, MMS reports, and a broad spectrum of government science projects.

Agricola 1970-present. A massive file of information about forestry, soil science, and vegetation. It contains journal indexing, and book and report citations.

Water Resources Abstracts 1976-present. This is *Selected Water Resources Abstracts*, water data abstracted from thousands of publications.

The library is open to the public and offers information help with natural resources questions, a union catalog of all Pacific Northwest library materials, and networked computer terminals accessing numerous resources sources. The library's phone number is (907) 271-5025 and fax is (907) 271-5965.

—Jane Mangus

Obsidian hydration studies may reveal ancient trade routes

BLM's obsidian hydration studies at the Batza Tena obsidian source in Interior Alaska may expand worldwide knowledge of the migration and trade routes of prehistoric people who populated the arctic region. Alaska BLM archaeologists Michael Kunz and Dr. John Cook have been working on the volcanic glass site since 1991 under a BLM research grant.

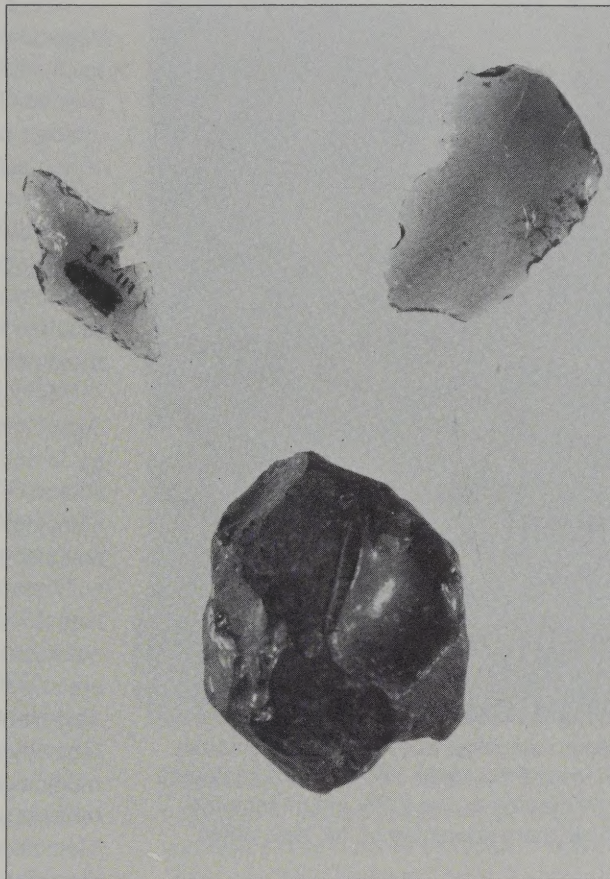
The two archaeologists have been refining and testing the use of obsidian, a smoke-colored volcanic glass, for dating archaeological sites in northern and Interior Alaska.

"Ancient humans made stone tools such as scrapers, projectile points and knives from obsidian, a natural glass of volcanic origin," Kunz said. Obsidian has been found in about half of the 2,000 archaeological sites inventoried on public lands managed by BLM in its three northern districts.

A freshly chipped surface on a piece of obsidian begins to absorb moisture from its surroundings and continues to absorb it at a known rate, so scientists can figure out when an obsidian artifact was made by measuring the amount of moisture that has been absorbed by the glass. How fast it absorbs water depends on the local soil temperature and the chemical composition of the obsidian. Since the rate is specific to the location, Cook and Kunz are determining those rates for selected locations in Alaska.

"Also, each piece has its own identity," said Cook, "which we can find by analyzing its trace elements. Each set of trace elements is specific to an individual obsidian source, so once we've identified the 'fingerprint' for a source location, any piece of obsidian from that source can be recognized, no matter where it is found." Most obsidian found in northern Alaska archaeological sites comes from the Batza Tena source in the Koyukuk River drainage.

"During our fieldwork at Batza Tena last summer we continued gathering soil temperature data important to our obsidian hydration research," Kunz said. He and the third member of the research team, Dr. Richard Reanier, implanted thermal cells in a number of archeological sites so they could



Dan Gullickson

Obsidian in its natural state is known as a cobbles (bottom), and is found in varying sizes. Flakes (upper right) were chipped off the cobbles and further refined by the toolmaker into tools, such as this arrowhead (upper left) or a projectile point.

recover annual soil temperature data that will help refine the use of the obsidian hydration dating technique in Alaska.

Kunz and Reanier also did an obsidian procurement study in the gravel bars of the Indian River to determine the availability of obsidian in the river gravel. "We also did a lot more work in delineating the size of the source and the availability of usable obsidian cobbles at the source site," Kunz said.

"We're also gathering data that may tell us when the source was first utilized by humans, which might give us an idea of when humans first arrived in that part of the country and how they lived."

—Sharon Durgan Wilson

Mesa Site still fascinates scientists from around the world



Dan Gullickson

Members of the Inupiat History, Language and Culture Commission for the North Slope Borough visited the Mesa Site at BLM's invitation. Archaeologists asked the commission to see if any elders from the northern communities could tell them about use of the area within their lifetimes.

The Mesa archaeological site on BLM-managed land in northern Alaska, rated as one of the highest-priority research projects being conducted by the BLM, continues to draw scientists and publicity from across the nation. Research at the site is under the direction of BLM Arctic District archaeologist Michael Kunz and Dr. Richard Reanier, of Reanier & Associates, a Seattle-based firm.

A high point of last summer's short field season was a visit by archaeologists who are experts on early human populations in North America. "They were impressed by the quality of our research," Kunz said, "and concurred with our findings that this site was occupied by Paleoindian hunters beginning about 11,700 years ago."

The excavation team's geologist initiated research on the environment of the region for the time period the site was occupied. "The valley around the Mesa used to be grassland and then it changed into a tundra environment," Kunz said. "That's when the Pleistocene animals, such as bison and mammoth, disappeared. We're very interested in when that environmental change occurred, because it will give us a better picture of what kind of environment these ancient people were utilizing, and how."

Kunz' team took core samples from below the tundra vegetation, at the base of the peat layer which is thought to mark the environmental change. "From the core samples we'll try to get radiocarbon dates to find out when change occurred," Kunz said.

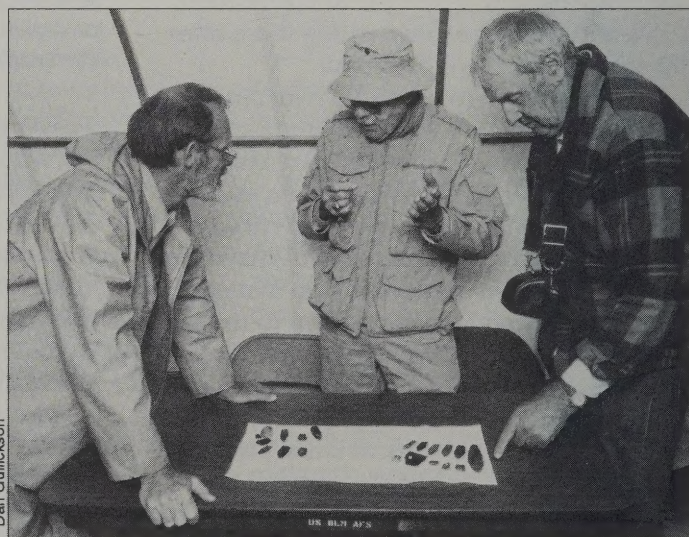
An article and full-color pull-out poster on the Mesa Site was published in the October 1993 issue of *Science and Children*. The article is part of BLM's *Heritage Education Program*.

Science World published a similar-style educational article for teens, and the *Los Angeles Times Magazine* had an in-depth article on the Mesa Site on December 5.

Mark January 6, 1994, on your calendar to watch "Ice Age Crossings" on the Learning Channel. The archaeology series will feature the discovery's importance in the research of the peopling of the new world. The Learning Channel's camera crew filmed at the Mesa Site for a week last summer.

Members of the Inupiat History, Language and Culture Commission, from the North Slope Borough in northern Alaska, also visited the site last summer. "They are very interested in the site and incorporating information from it into the teaching program in the borough school system," said Kunz. He is working with the commission to develop displays and information for the schools, and a permanent display for the Simon Paneak Memorial Museum in Anaktuvuk Pass, a Nunamiut Eskimo village about 250 miles north of Fairbanks.

—Sharon Durgan Wilson



Dan Gullickson

Arctic District archaeologist Michael Kunz discusses artifacts from the Mesa Site and their relationship to artifacts from Paleoindian sites in the Lower 48, with Dr. Haynes, University of Arizona and Dr. Frison, University of Wyoming.

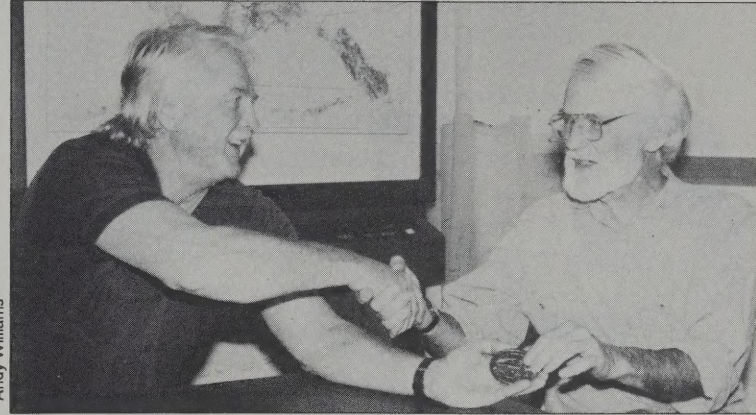
BLM volunteer receives national award for work on arctic char study

As a volunteer with the BLM's Kobuk District Office, Graham Davis worked more than 1,000 hours on a report on the literature of arctic char research. Davis' report is part of a study by district fisheries biologist Joe Webb about an unusual variety of char isolated in lakes in the Kigluaik Mountains of the central Seward Peninsula. For his work, Davis received a "Volunteers for the Public Lands" national award from BLM Director Jim Baca.

According to the citation from Baca, Davis provided significant information on the rare and environmentally sensitive fish. "Your research will help the BLM with the management of Federal lands in Alaska in the future," Baca said. "Moreover, the report that you produced will be used as a basis for further analysis of these lakes as crucial habitat for a potential special status species."

Davis is an estuarine ecologist and former chairman of the department of biology at East Carolina University in Greenville, N.C. After retiring four years ago, he began coming to Alaska in the summers as a volunteer, first for the U.S. Forest Service and then in 1992 for the BLM.

Webb put Davis to work on a study of the char, first identified by the BLM in the Kigluaik lakes in 1987. Webb said the char apparently have evolved in isolated glacial areas for several thousand years and may have developed certain distinct physical characteristics. "Arctic char interest biologists because of their great genetic variability," said Webb. "They have been widely researched in Europe in the last 10 to 12 years and we badly needed to compile the research. Graham's report on



Kobuk District fisheries biologist Joe Webb presents volunteer Graham Davis with a BLM belt buckle. Davis helped Webb with a study of arctic char in lakes in the Kigluaik Mountains.

the literature of char research is a valuable contribution."

Davis, now living near Wasilla and working as an observer for the Alaska Department of Fish and Game aboard fishing boats in the Bering Sea, expressed his appreciation. "I'm indeed honored by the national BLM award," he told Webb, "however, the greatest honor was simply being nominated by you and the Kobuk District."

Kobuk District Manager Helen Hankins expressed appreciation for Davis' efforts. "Every year volunteers provide many important services to BLM. Our mission would be much more difficult if it were not for exceptional people like Graham Davis," she said.

—Andy Williams

Public gains new lease on military land

The military is important to Alaska's people and economy. The large land withdrawals that comprise Fort Greely near Delta Junction and Fort Wainwright's Yukon Maneuver Area near North Pole, make it possible for Army troops and Air Force pilots to train. But new plans completed by BLM for each of these posts also provide many opportunities for civilians to use these lands.

As directed by the Military Lands Withdrawal Act of 1986, BLM is issuing separate Proposed Resource Management Plans/Final Environmental Impact Statements for the 250,000-acre portion of Fort Wainwright east of the Richardson Highway, and the 600,000 acres of Fort Greely.

The plans call for better protection of wildlife habitat, and preservation and interpretation of cultural resources. Timber and fuel wood harvest could occur after timber management plans are completed.

The plans guarantee that the Army and Air Force can use the lands for training. Visitors still have to get permission to enter the forts, and the military can close areas temporarily while troops are on maneuvers. For safety reasons, impact areas are permanently off limits. Lands will be kept open to the public for hunting, fishing and trapping—important uses that the Army already allows.

The army joined with BLM as a partner in planning for these withdrawals. "The Army people on the planning team were very helpful," said Jim Ducker, planning team leader. "They brought to the team an indispensable expertise on the land and the resources of the forts. A Memorandum of Understanding between BLM and Army, now in the final drafting stages, will clarify our joint management of the lands to make the public's use of them as trouble free as possible."

—Ed Bovy

Growth from the ashes—

Using fire as a tool for ecosystem management



Experts in fire sciences and resource management gathered at the Alaska Fire Service in October for a workshop on the changing role of fire management. From left are Brian Mitchell, environmental protection specialist with the National Park Service in Denver, Colorado; Jack Cohen, research physical scientist with the U.S. Forest Service's Southern Forest Fire Service Laboratory in Dry Branch, Georgia; Dave Dash, chief of fire operations for AFS; Terry Van Nest, senior fire management instructor at the Forest Technology School in Hinton, Alberta; and Robert Mutch, research applications leader with the Intermountain Research Station, USFS, in Missoula, Montana.

Alaska's wildland firefighters have seen the future and it's called "ecosystem management."

About 90 members of Alaska's fire suppression community met with nationally recognized leaders in fire sciences and resource management at a fire management workshop sponsored by the BLM's Alaska Fire Service in October.

The workshop emphasized the changing role of fire suppression in resource management. Participants said the days are gone when firefighters tried to put out every fire they saw. Nowadays the beneficial role that fire plays in the ecosystem is widely recognized.

Two representatives from the U.S. Forest Service in Montana said nearly a century of fire suppression has led to declines in the Ponderosa pine forests of the Great Basin and northern Rocky Mountains. Low-intensity fires at frequent intervals cleared the underbrush and allowed the pine to regenerate. Without fire, a thick carpet of fir is choking out the pine. When fires do occur, they are far more destructive than a nor-

mal fire would be.

However, Robert Mutch, research applications leader with the Intermountain Research Station in Missoula, said fire suppression has been blamed for the decline in the ecosystem. "But that is not true," he said. "Fire suppression is a cornerstone of fire management policy. It's fire *exclusion* that has been one of the chief culprits in ecosystem decline."

Chuck Spoon, program officer for resources at the Lolo National Forest, commented about the need for fire in ecosystem management. He said one resource should not be managed "so extensively that we run the danger of losing another resource. We need to consider the parts as well as the whole."

Spoon noted, though, that there are risks associated with prescribed fires.

For example, he said, forest managers decided to allow a small fire to burn in Montana in 1988. The fire escaped its boundaries and ended up burning 240,000 acres. "So a land manager needs to have guts."

Many practices recommended at

the workshop are already being used in Alaska. BLM fire operations chief Dave Dash noted that fire crews here use techniques in building fire lines that have minimal effect on the landscape.

Environmental degradation caused by lack of fire in the Lower 48 is not evident in Alaska. Dash said fires here occur at greater intervals and replace tree stands rather than just clearing out the vegetation beneath them.

The fire management plans devised by land managers and the interagency fire community also serve to keep fire a part of the ecosystem. The plans include a limited suppression option, which allows fire managers to monitor fires on selected lands without putting them out.

Dash said prescribed fires and other projects to reduce the amount of burnable vegetation are needed in areas where fires are suppressed; however funding for such programs is scarce.

—Andy Williams

Northstar crew gives firefighting recruits a foot in the door



Dan Gulickson

Members of the Northstar Fire Crew practice fire fighting skills on a fire set to clear brush away near the BLM Northern Districts Office Building in Fairbanks last summer.

The Alaska Fire Service receives many applications each year for smokejumpers, fire suppression specialists and hotshot crews. But turnover is low and vacancies are few. AFS has a program, however, to give would-be firefighters a foot in the door.

The Northstar Fire Crew provides entry-level positions into the Alaska Fire Service for individuals with little or no fire experience. Begun in 1987, it was designed as a training crew to develop an experienced pool of potential recruits for the two regular hotshot crews and other firefighting positions. The Northstars operate as a hotshot crew—a hand crew whose members are specially trained to provide quick response to fires that have escaped initial attack.

"The focus for recruiting for the

Northstars is in the state of Alaska, and particularly rural Alaska because that's where the fire experience is," said Dave Jandt, hotshot program leader.

Jandt and Northstar Crew leader Aaron Jokisch said many of the Northstars have worked on emergency firefighter crews in Alaska villages. Northstars have gone on to work on hotshot crews, as smokejumpers and fire suppression specialists, and with BLM districts.

The 20-member Northstar crew reports to fire service headquarters at Fort Wainwright the first week of June. After passing a physical fitness test, they undergo a week's training in basic fire fighting techniques.

"The program is basically a stepping stone between emergency firefighter crews and the hotshots,"

Jandt said. "It's a step up from emergency fire fighting training, and the next step is hotshot training."

After training, the Northstars go to work on non-fire projects for AFS and the BLM districts. Last summer they cleared out trees damaged by heavy snowfall on Fort Wainwright, and worked on the Sourdough Campground in the Glennallen District.

The Northstars receive room and board during the season but no wages unless actually employed on a fire. They receive emergency firefighter wages of about \$12.84 an hour on fires. Last summer, the Northstars spent 35 days on fires. As they worked up to 16 hours a day, their paychecks added up quickly. Jokisch said crew members grossed about \$6,000 last season.

After the Alaska fire season ends, the hotshot crews usually are sent to fires in the Lower 48. Often vacancies occur as crew members return to school. Jandt said the Northstars usually place six to eight members a year on hotshot crews. "When we have an opening on the hotshot crews, the Northstars are the first place we look," he said.

Jokisch said AFS receives more than 100 applications a year for positions on the Northstars. AFS has a recruitment program for the program but the best advertising is word-of-mouth, he said.

"Usually when one person from a village works on a crew, they go back and the next year you see six or eight applications from that village," he said.

Application forms for the Northstars must be filled out and returned to AFS by April 1. Forms and other information may be obtained by writing the AFS Hotshots, P.O. Box 35005, Fort Wainwright, AK 99703, or telephoning 1-800-258-7706.

—Andy Williams

frontier flashes

Arco Alaska Inc. presented a \$9,000 grant to Anchorage District manager Dick Vernimen and Campbell Creek Environmental Education Center manager Kathy Liska. The nonprofit Alaska Natural History Association will administer the grant. Funds provided by the grant will be used to purchase educational equipment for the new center, which is now in the design stage of construction.

Three BLM rangers assisted the Fairbanks Snow Travelers Association during a one-day course in basic snowmobile safety this winter. Nearly 250 people turned out during the Second Annual Snowmachine Safety Clinic.

Snowmobiling, a popular winter sport, is also a primary form of winter transportation for many people in Alaska and safety is always a concern.

Rangers displayed maps of BLM lands that are exceptionally good for snowmobiling, including the Steese and White Mountains National Recreation Areas.

The Slana Community Corporation received a right-of-way grant from the BLM Glennallen District Office that will enable the corporation to provide access to about 50 homesites, headquarters sites, and trade and manufacturing sites.

The right-of-way allows the corporation to legally maintain and make improvements to the approximately 12 miles of roads in the South Slana settlement area.

The Slana area was the last place in the U.S. opened for federal homesteading. All federal programs relating to homesteading in Alaska expired in 1986.

The State of Alaska has filed claims with BLM for 664,101 acres of land, part of its final round of applications for land granted to it by the Alaska Statehood Act.

Under the Statehood Act, Alaska was entitled to approximately 104.5 million acres. To date, the State has received patent to 36.5 million acres of surveyed land, and 50.4 million acres of unsurveyed lands are under Tentative Approval.

Visitors who come to BLM's Public Room in Anchorage to look up land records now have a pleasant surprise waiting for them.

Public Room staff recently revamped the indexing of the more than 20,000 aperture cards used daily by people researching the status of lands throughout Alaska. Each card contains microfiche of the master title plat to a specific township and range.

A new indexing system allows users to go directly to the township and range they need and pull the appropriate card. Users then take the card to a viewer to obtain land status information. The technology isn't new, but the improved indexing makes it infinitely more user friendly. Public Room personnel say the new indexing helps members of the public, other government agencies or BLM land law researchers find the information they need much more quickly.

If you need information on the ownership or status of lands within Alaska, Public Room staff will be happy to answer questions or assist you in locating a master title plat.



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BLM-AK-GI-94-005-1120-912

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